***CORR* Insights®: The Effect of Infrapatellar Fat Pad Excision on Complications After Minimally Invasive TKA: A Randomized Controlled Trial**

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Where Are We Now?

Many TKA surgeons perform a partial or complete excision of the infrapatellar fat pad for better view to facilitate optimal component positioning during primary TKA. Most revision arthroplasties, which call for still greater exposure, include complete excision of the infrapatellar fat pad. Despite this, whether this part of the exposure results in differences in patients' pain or function remains an open question and one for which there is no real evidence-based consensus.

The infrapatellar fat pad contains nerve and immune cells (macrophages) capable of producing inflammatory and growth factors [7]. It may also contribute to the inflammatory processes in patellofemoral knee pain, knee

osteoarthritis, and rheumatoid arthritis [1]. The infrapatellar fat pad can influence pain sensation because nerve branches of many large lower extremity nerves run through it. Lehner and colleagues [3] found an increase of sensory nerve fibers in the infrapatellar fat pad of patients undergoing TKA.

Patients' pain and satisfaction levels vary after TKA. Therefore, we should consider all avenues that improve our techniques. In our recent systematic literature review aimed to investigate whether the infrapatellar fat pad should be resected or preserved during TKA [8], we included two randomized controlled trials and three observational studies. We showed, based on two available randomized controlled trials so far, that infrapatellar fat pad resection during TKA offers favorable results in patients with osteoarthritis (less anterior knee pain), whereas results are worse in patients with rheumatoid arthritis (more anterior knee pain).

Where Do We Need To Go?

The study by Pinsornsak et al. is the third surgical randomized controlled trial evaluating the effect of infrapatellar fat pad resection in TKA. The authors studied a group of patients with osteoarthritis and rheumatoid arthritis (94% osteoarthritis), using a minimally invasive approach. We could consider this patient group as mainly osteoarthritis, making it the second randomized controlled trial in literature evaluating the effect of infrapatellar fat pad excision in osteoarthritis patients. The current study shows no difference in the primary outcome measurement (patellar tendon shortening), confirming the findings of the other osteoarthritis randomized controlled trial [4]. But in contrast to the earlier randomized controlled trial, the current

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study shows more anterior knee pain in the infrapatellar fat pad excision group (three out of 36 patients in the excision group). This study suggests that we should not expect patellar tendon shortening in patients with osteoarthritis. However, until we have higher-quality studies, we will continue to have conflicting evidence regarding anterior knee pain.

The limitations of the current study, including absence of blinding, lack of data analyzing patients lost to followup, and selective patellar resurfacing makes it difficult to fully interpret the results. This is confirmed by the observation that the five studies in our review, and the current study, were graded as low-quality, based on the (strict) Cochrane Collaboration's tool for assessing risk of bias [2].

How Do We Get There?

The quality of randomized controlled trials evaluating surgical treatment effectiveness is very limited [5], and a review of these trials showed large bias arising from to unblinded outcome assessors [6]. High-quality studies are needed to solve the conflicting evidence regarding postoperative anterior knee pain, which I consider the most important outcome measurement influenced by infrapatellar fat pad resection. In terms of study design, the next study ought to randomize a strictly end-stage osteoarthritis patient group, with clear description of surgical procedure regarding the infrapatellar fat pad, blinding of patient and clinical outcome assessors, and no selective cointerventions (such as patellar resurfacing or the lack thereof). Anterior knee pain should be evaluated using standardized clinical outcome measurement tools, such as the Knee Injury Osteoarthritis Outcome Score or Kujala anterior knee pain score [9].

Until we have decisive information and clear advantage of one technique over the other, we should not let the infrapatellar fat pad hamper optimal visualization and implant positioning.

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